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Conference Literature

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APPLIED MECHANICS

The ASME Applied Mechanics Conference. Columbus, Ohio; June 16-19, 1991. New York: The American Society of Mechanical Engineers; 1991.

The 4 volume set is comprised of Mechanics of Composites At Elevated and Cryogenic Temperatures (ISBN 0-7918-0724-X), Dynamics of Bubbles and Vortices Near a Free Surface (ISBN 0-7918-0725-8), 1991 Biomechanics Symposium (ISBN 0-7918-0726-6), and Recent Advances in Mechanics of Structured Continua (ISBN 0-7918-0723-1). Recent Advances in Mechanics of Structured Continua cover aspects of non-Newtonian fluid mechanics, mixture theory, porous media flow, and composites. The treatment is theoretical and would be useful in a research environment. The 1991 Biomechanics Symposium presents extended abstracts of the presentations at the conference and reflects the state of the art in biomechanics research. The specific topic areas included cellular biomechanics, constitutive modeling, experimental methods in biofluid mechanics, joint mechanics, locomotion and control, and vibration induced musculoskeletal disorders. The Mechanics of Composites at Elevated and Cryogenic Temperatures deals heavily with metal matrix and composite laminates, but examines recent and experimental entrants into the composite materials field. Dynamics of Bubbles and Vortices Near a Free Surface examines ship wakes and their detection by remote sensing devices and range from modeling to actual measurement for identification of ships' wakes.

ENERGY

Clean Energy for the World. Proceedings of the 1991 International Conference on Fluidized Bed Combustion. Edited by E.J. Anthony. New York: The American Society of Mechanical Engineers; 1991.

This three-volume set is comprised of Atmospheric and Pressurized Fluidized Bed Applications, Fuels and Sorbent, Advanced Concepts, Research and Development Fundamentals, Components, and Environmental Issues. All presentations were related to the technological application of using coal and other fuels in a more ecologically sound manner whether they were practical, theoretical, or research oriented. This conference was co-sponsored by The Canadian Electric Power Associates, Electric Power Research Institute, Energy, Mines, and Resources-CANMET, Environment Canada, Ontario Hydro, Nova Scotia Power Corporation, New Brunswick Power Commission, The

Tennessee Valley Authority, and the 6th International Conference on Fluidization. This set is a valuable contribution not only to research and development efforts in the use of fossil fuels, but is interesting from an environmental perspective.

FLUIDS

The First ASME-JSME Fluids Engineering Conference. Portland, Oregon; June 23-27, 1991. New York: The American Society of Mechanical Engineers; 1991.

The sixteen volumes that were published from this conference included: Measuring and Metering of Unsteady Flows 1991 (ISBN 0-7918-0700-2), General Topics in Fluids Engineering 1991 (ISBN 0-7918-0701-0), Fluid Measurement and Instrumentation Forum 1991 (0-7918-0702-9), Cavitation and Multiphase Flow Forum 1991 (ISBN 0-7918-0703-7), Turbulence Modification in Multiphase Flows 1991 (ISBN 0-7918-0704-5), Forum on Microgravity Flows 1991 (ISBN 0-7918-0705-3), Forum on Turbulent Flows 1991 (ISBN 0-7918-0706-1), Forum on Micro Fluid Mechanics 1991 (ISBN 0-7918-0707-X), Boundary Layer Stability and Transition to Turbulence (ISBN 0-7918-0708-8), Liquid Metal Flows 1991 (ISBN 0-7918-0709-6), Cavitation '91 (ISBN 0-7918-0710-X), Advances in Numerical Simulation of Turbulent Flows (ISBN 0-7918-0711-1), Liquid-Solid Flows 1991 (ISBN 0-7918-0712-6), Fluid Machinery Forum 1991 (ISBN 0-7918-0713-4), Numerical Simulations in Turbomachinery (ISBN 0-7918-0714-2), and Gas-Solid Flows 1991 (ISBN 0-7918-0715-0). Gas-Solid Flows examined simulation, chaos and analytical developments, particle wall and particle-particle interactions, transport and monitoring, particle separation, numerical models, and experimental studies. Numerical Simulations in Turbomachinery incorporated design and optimization methods as well as three-dimensional flow simulations for applications involving incompressible, transonic, and multi-phase flows in axial and centrifugal machines. Papers related to design, analysis, and performance of fluid handling machinery make up the Fluid Machinery Forum volume. Modeling, experiments, numerical simulations, and applications comprise the Liquid-Solid Flows volume. Advances in Numerical Simulation of Turbulent Flows addresses assessments of turbulence models, simulation of three-dimensional flows, and numerical techniques. The volume on Cavitation deals with inception and bubble dynamics, foil, flow and propeller, and erosion. Casting and electromagnetic effect from the basic and experimental to application are covered in the volume on Liquid Metal Flows. Boundary Layer Stability and Transition to Turbulence is devoted to receptivity, bypass mechanisms, curvature, three-dimensionality, nonlinearity, breakdown, and control. A majority of the interest in micro fluid mechanics is due to the move to scaled-down hardware and is reflected in the papers on chip and robotic design presented at the Forum on Micro Fluid Mechanics. The Forum On Turbulent Flows covers the topic from fundamental research to applications. The theoretical and experimental aspects of two-phase and capillary flows, and fluid physics in

microgravity are covered in the volume entitled Forum On Microgravity Flows. Turbulence Modification In Multiphase Flows deals with gas-liquid, gas-solid, and liquid-solid flows, frequently using numerical analysis. The forum on Cavitation and Multiphase Flow dealt with more practical aspects of cavitation and flow and the interaction between the two. Fluid Measurement and Instrumentation dealt strictly with the techniques of measuring, utilizing flowmeters and flow visualization. General Topics In Fluids Engineering were not only general, but covered the gamut from developing natural convection to velocity profiles with the treatment varying from experimental to practical. Measuring and Metering of Unsteady Flows emphasized experimental measurements and techniques. The set neatly caps current trends in fluids engineering.

HYPERMEDIA

NATO advanced research workshop, 1989. Designing hypermedia for learning. Edited by David H. Jonassen and Heinz Mandl. NATO AST series. Berlin: Springer-Verlag; 1990. 484 p. $79.00. Casebound. ISBN 3-540-52958-6.

This proceedings is a thoughtfully presented compendium of papers on various aspects of hypermedia design. The book is arranged to be used like hypermedia. The text of each paper lies along the inner two-thirds of the page: in the wide margin are notes referring the reader to other points of view expressed elsewhere in the book, plus ample room for the reader's own notes. This is a book that's meant to be used. Other hypermedia tools are keyword lists and contents lists for each chapter. There is no index; perhaps the other tools are deemed sufficient? Despite its hypermedia-like structure, or because of it, the book is theoretical and thoughtful, not a how-to book at all. It is a valuable background book for anyone conemplating hypermedia design.

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MATERIALS

Fall Meeting of the Materials Research Society, 1990. Synthesis and and properties of new catalysts: utilization of novel materials components and synthetic techniques (extended abstracts). Edited by E. W. Corcoran and M. J. Ledoux. Pittsburgh, PA: Materials Research Society; 1990. 256 p.

The purpose of the symposium was to discuss new developments in catalytic materials syntheses and identification. The discussions are divided into seven major parts: microporous materials, layered materials, oxides, carbides, sulfides, nitrides, and metals in catalysis. Sixty-one contributions by two hundred and seven authorities examined new methods of syntheses, chemical reactions, physical properties, catalytic functions, and nuclear magnetic resonance of metals, non-metals, composites, and organic materials. Extensive use is made of tables of data, graphs, sketches, and photographs for visual support of the text. Emphasis is placed on crystalline structure and the effect of changes in crystalline form on physical characteristics. Each paper concludes with

a list of references for additional study and many show acknowledgments of the organizations supporting the research. Although the technical aspects of the papers require a working knowledge of chemistry, the non-technical portions are easily understood.

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Wear of Materials 1991. Presented at the International Conference On Wear Of Materials. Orlando, Florida; April 7-11, 1991. Edited by K. C. Ludema and R. G. Bayer. New York: The American Society of Mechanical Engineers; 1991. ISBN 0-7918-1617-0.

This two-volume set is divided into two categories. Category I (Volume 1) contains traditional research papers while Category II (Volume 2) are work-in-progress papers, especially from industry. As the title suggests, all aspects of wear, erosion, and damage are presented for various materials and coatings under myriad conditions. The papers in both Category I and II include theoretical and experimental studies and case studies.

Note: Copies of publications reviewed in this column are available for retention on a first-come first-served basis to those who mail a request to: Marsha Saylor, Hoechst Celanese Corporation, P.O. Box 9077, Corpus Christi, TX 78469-9077